

The injury reduction benefits of motorcycle protective clothing

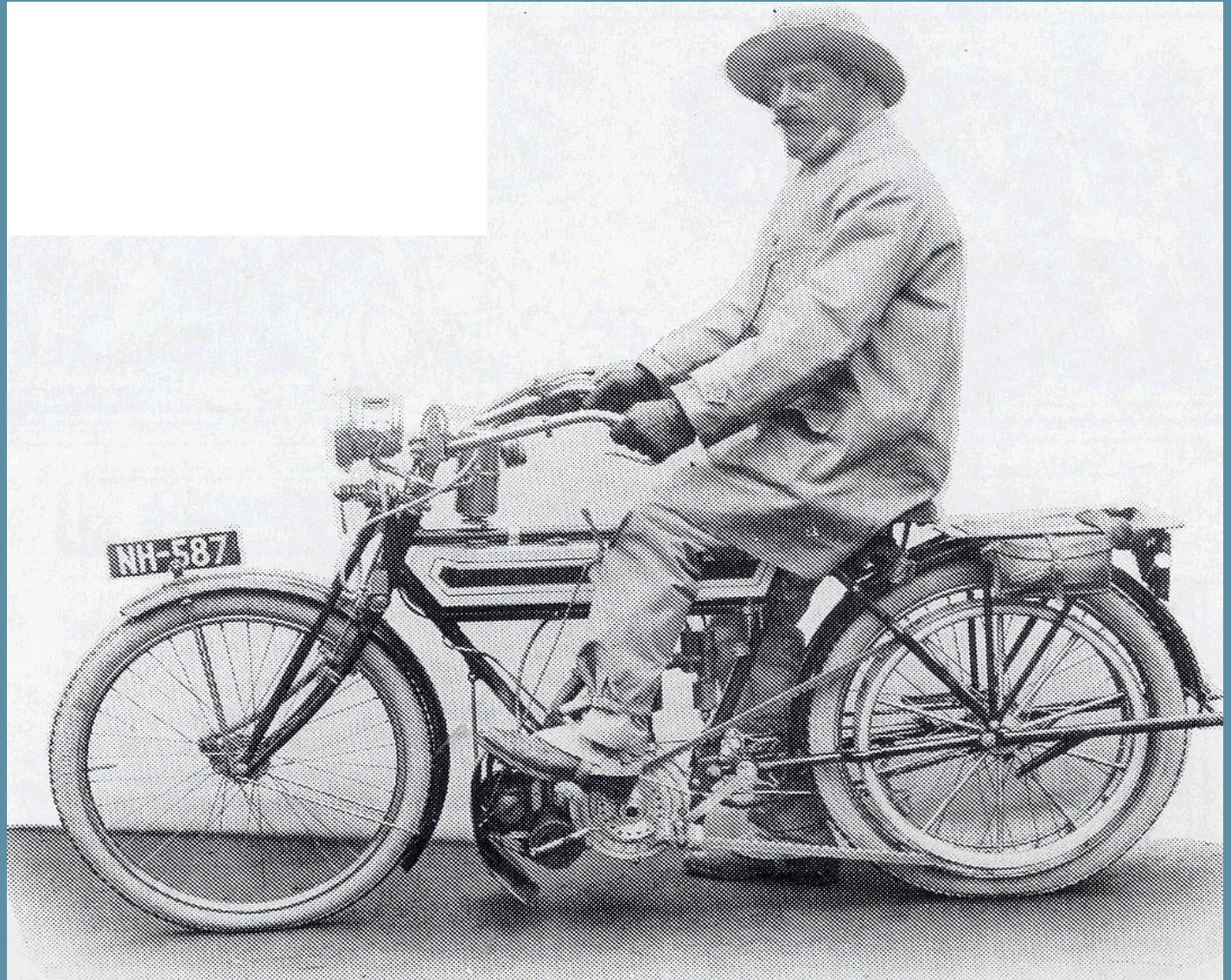
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NTSB Motorcycle Safety Forum
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Motorcycle protective clothing

Protection from what?

Protection from weather



Protection from other motorists



Protection from making a fashion error



Protection from injury



How does it work?

- ◆ Abrasion resistant (4-7 seconds)
- ◆ Cannot be cut, penetrated or torn
- ◆ Seams, fastenings and material will not split open
- ◆ Impact protectors

Protection from injury

No clothing can protect from:

- ◆ High energy impacts
- ◆ Being bent or crushed

However

- ◆ Most crash impacts (75%) are at 50km or less
- ◆ 40% riders tumbled or slid along the road surface without further impact.
- ◆ 49% of all injuries Level 1

(MAIDS, 2004)

Protection from injury

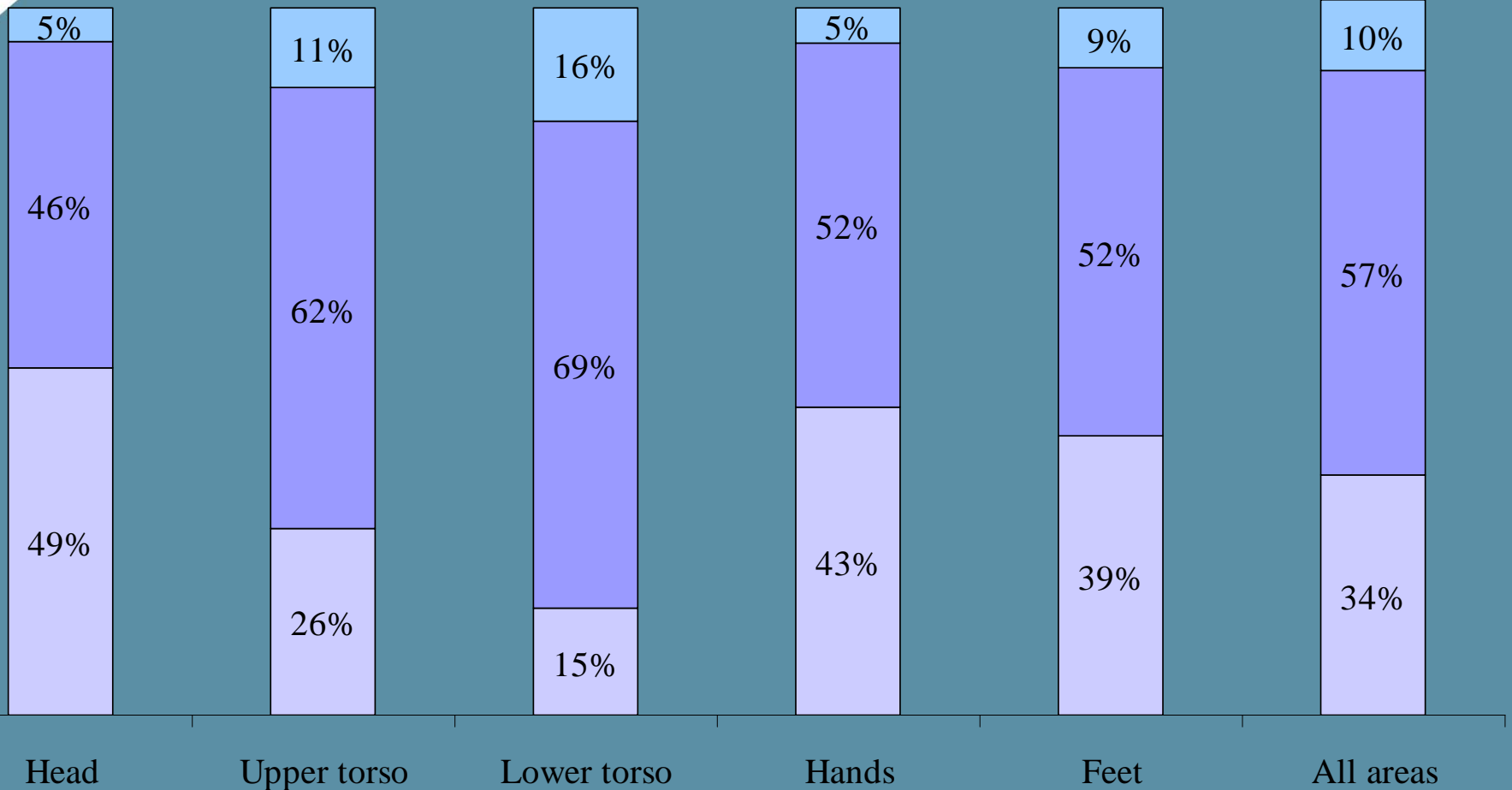
- ◆ Cuts, gravel rash & friction burns
- ◆ Exhaust pipe burns,
- ◆ Stripping of muscles & skin
- ◆ Infection & complications from road dirt in open wounds.
- ◆ Fractures and joint damage.

Maximum injury severity per rider (MAIDS, 2004)

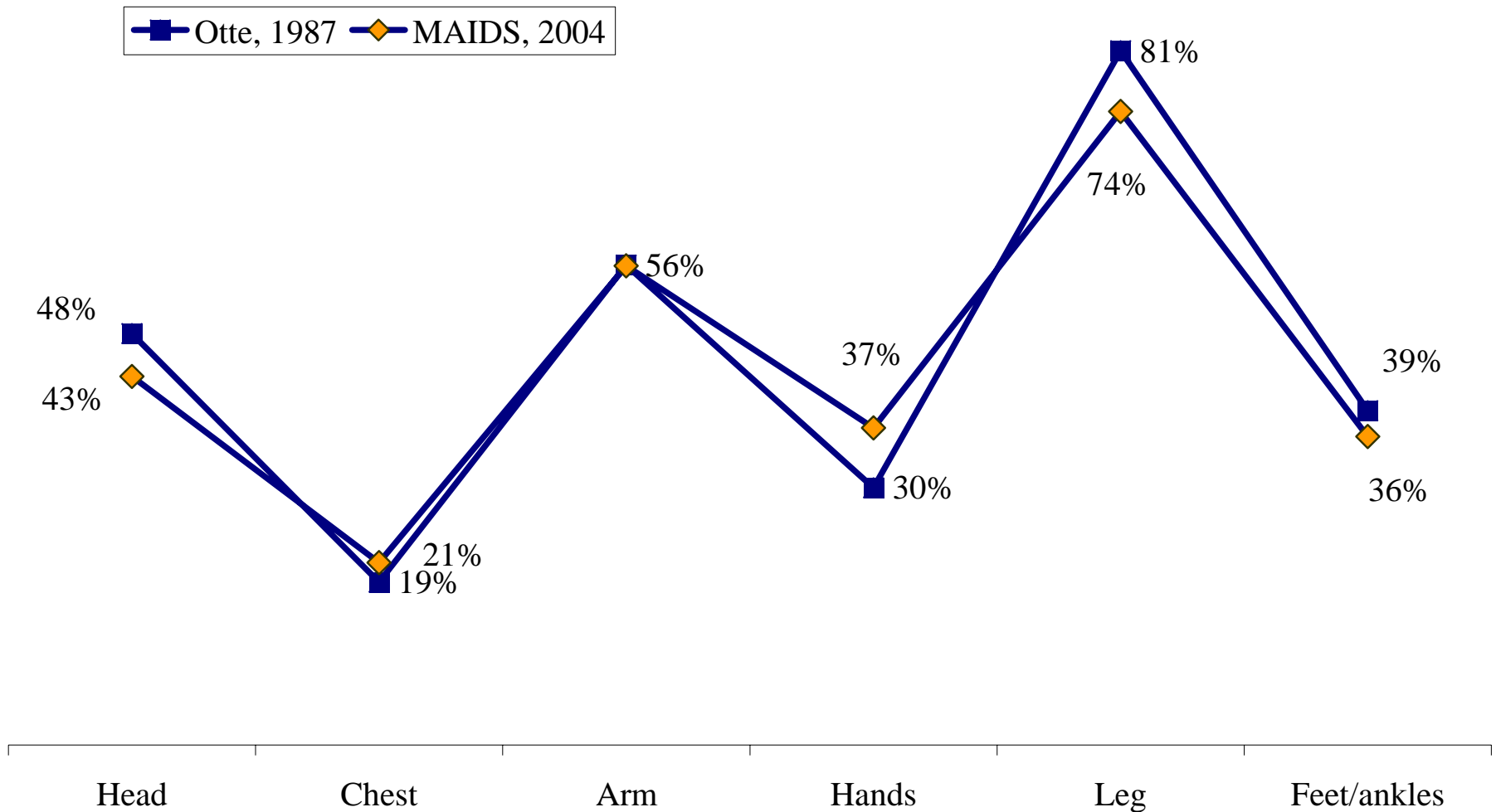
No injury 0	Minor 1	Moderate 2	Serious 3	Severe 4	Critical 5	Not survivable 6
2%	39%	33%	16%	4%	5%	2%

Reduced or prevented minor injuries

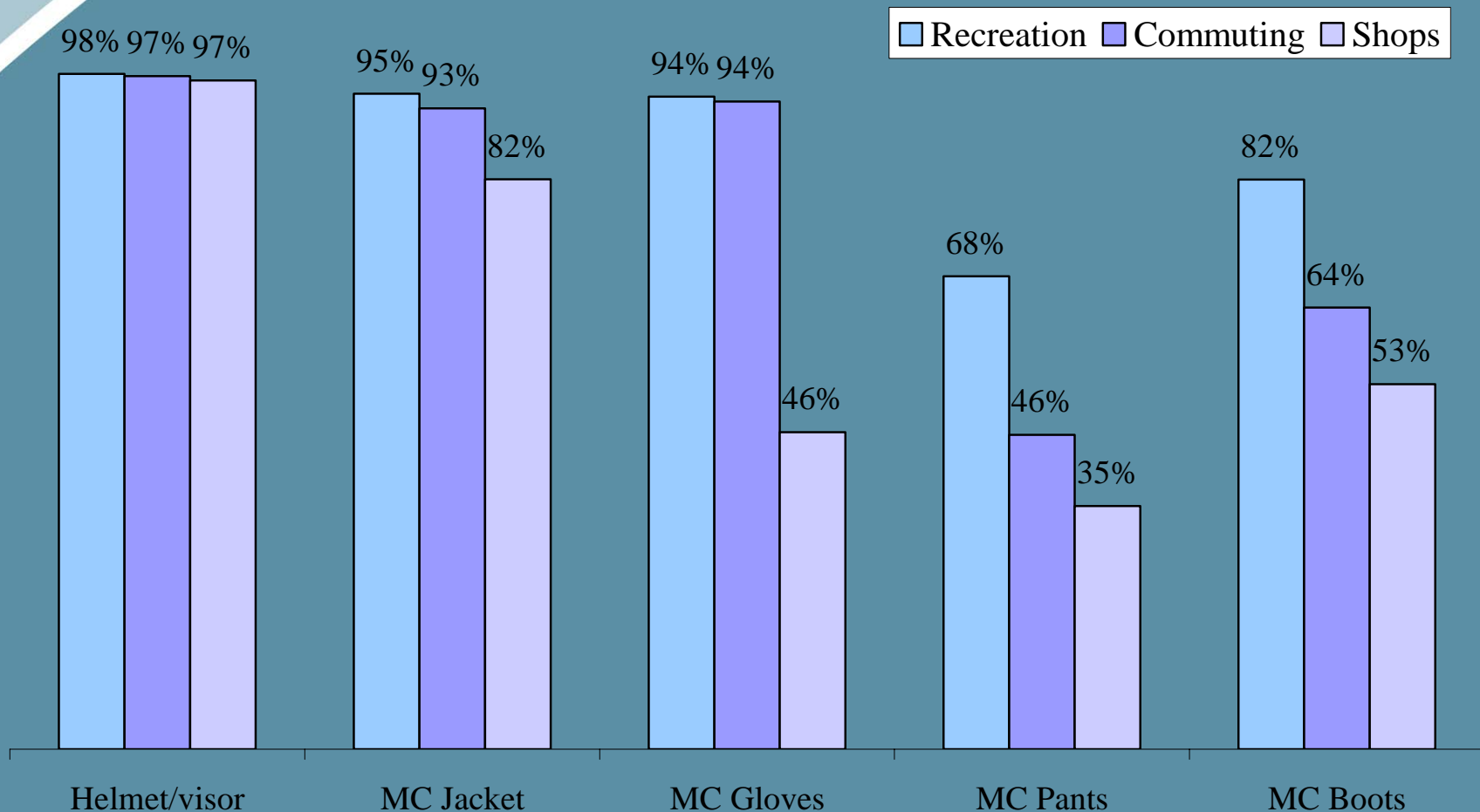
Prevented Reduced No effect



Patterns of injury impact 1987 vs 2004

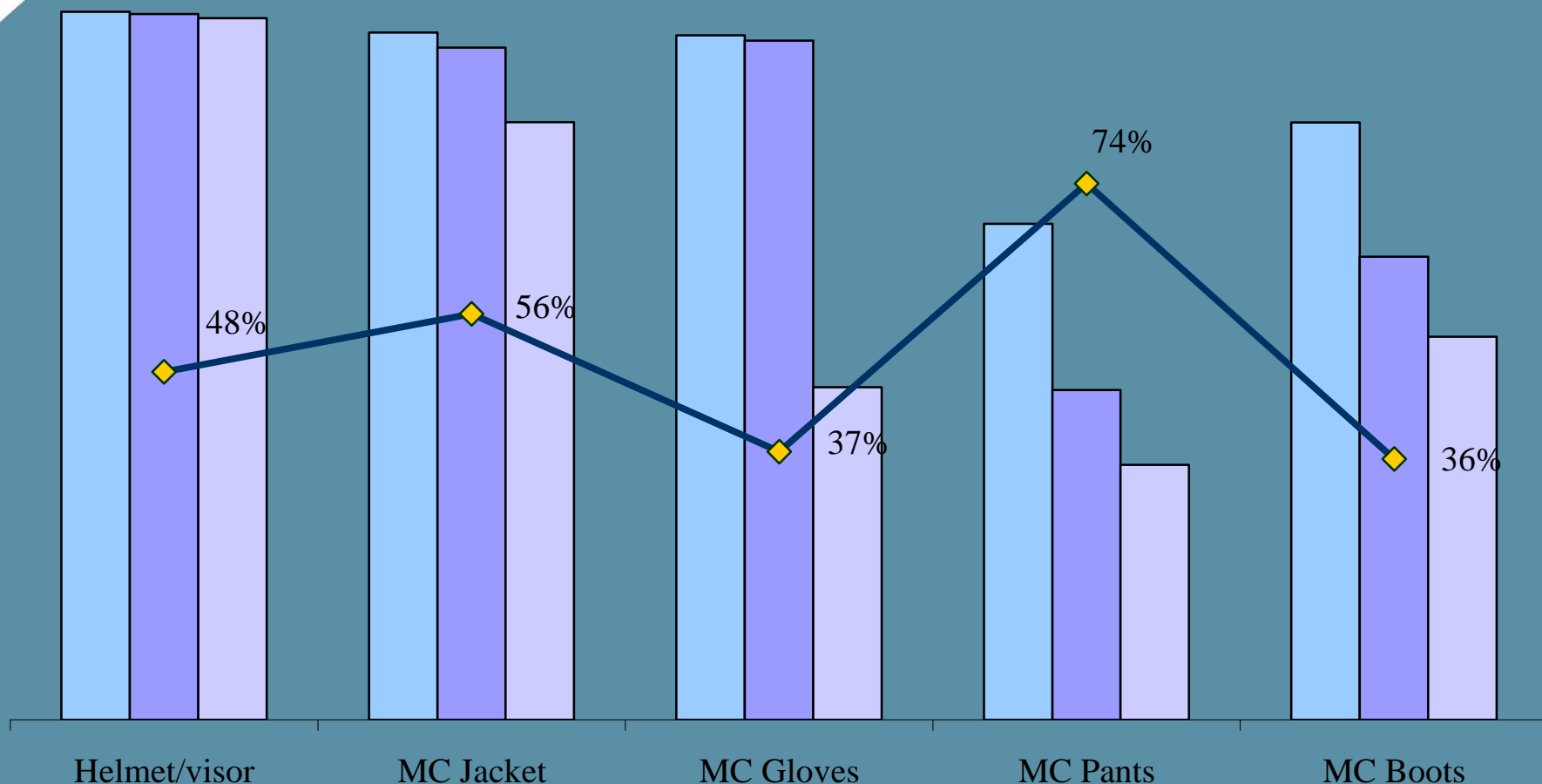


Australian motorcyclists' protective clothing

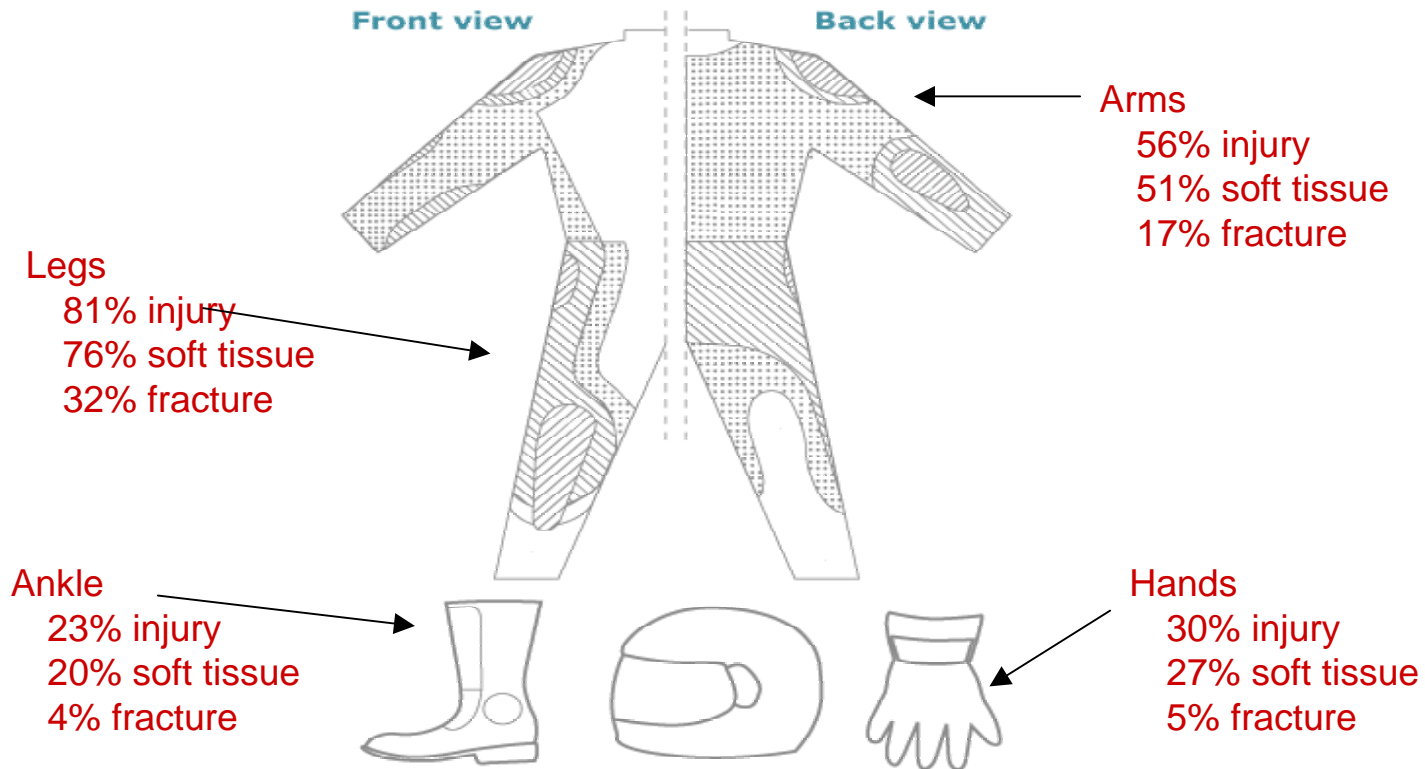


Protective clothing by injury risk sites

Recreation Commuting Shops Injury site



Injury Risk zones



The Law

Europe – protection from injury

Australia – fit for purpose

Consumer tests of leathers

Out of 18 one piece leather suits, how many scored 5 or less out of 10?

Abrasion test	7 out of 18
Burst test	10 out of 18
Impact test	9 out of 18
Tear test	8 out of 18
	2 had zip failure

All passed the road test for practicality, comfort.

(UK Ride magazine, 2004)

Summary

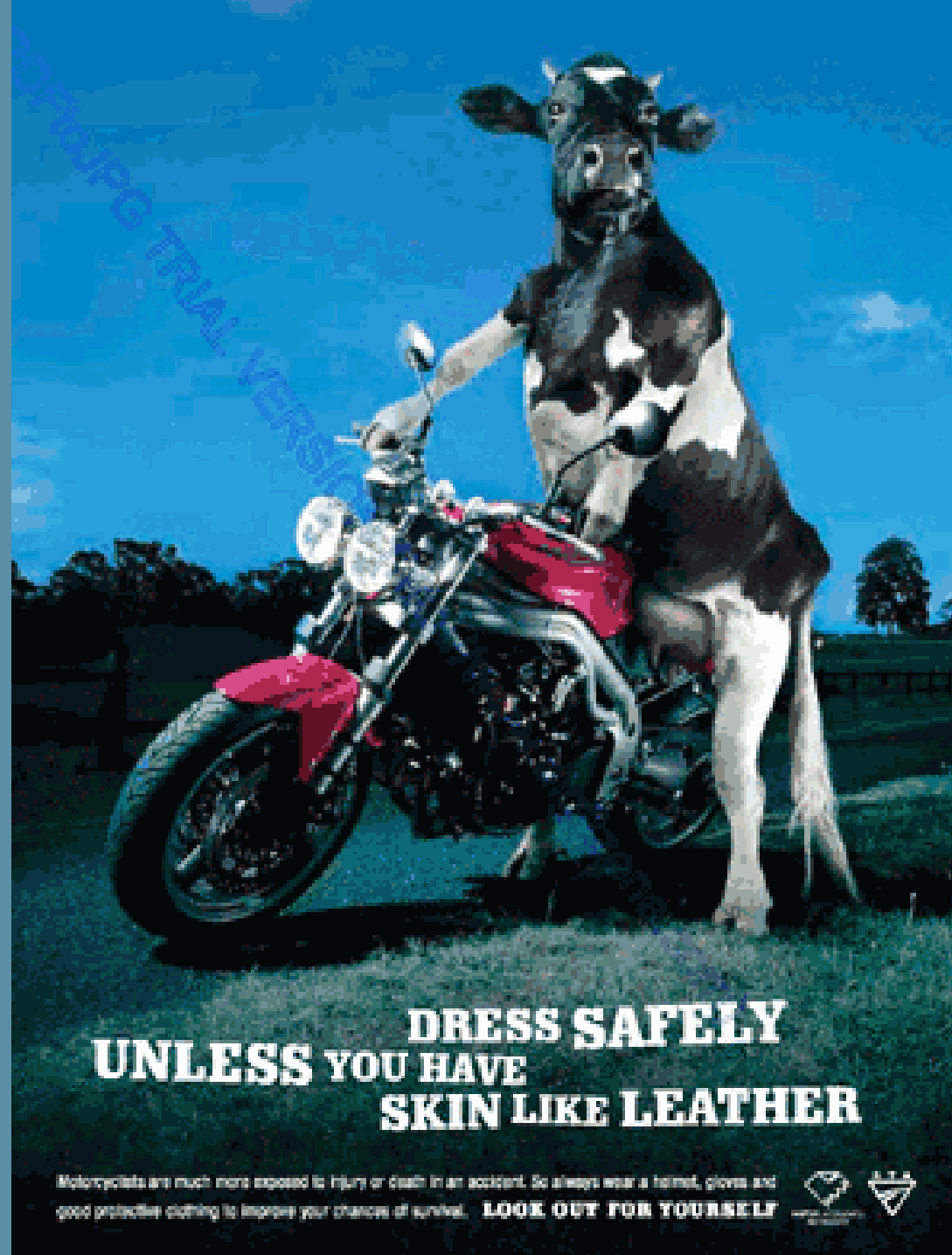
- ◆ Injury risk patterns are well known.
- ◆ Significant proportion of injuries can be reduced/prevented by protective clothing.
- ◆ Requirements for effective protective clothing are established and **can be tested**.
- ◆ Motorcycle clothing industry is not applying this information.
- ◆ Riders do not appear to be aware of this.

Web sites

www.roadsafety.mcc.org.au

www.rideforever.co.nz

Thank you for your attention



**DRESS SAFELY
UNLESS YOU HAVE
SKIN LIKE LEATHER**

Motorcyclists are much more exposed to injury or death in an accident. So always wear a helmet, gloves and good protective clothing to improve your chances of survival. **LOOK OUT FOR YOURSELF**



Schuller et al (1986)

Protective clothing reduced or prevented 43% soft tissue injuries

Injured riders wearing protective clothing:

- ◆ 7 days less in hospital
- ◆ Returned to work 20 day earlier
- ◆ 40% less permanent disability

Otte (2002)

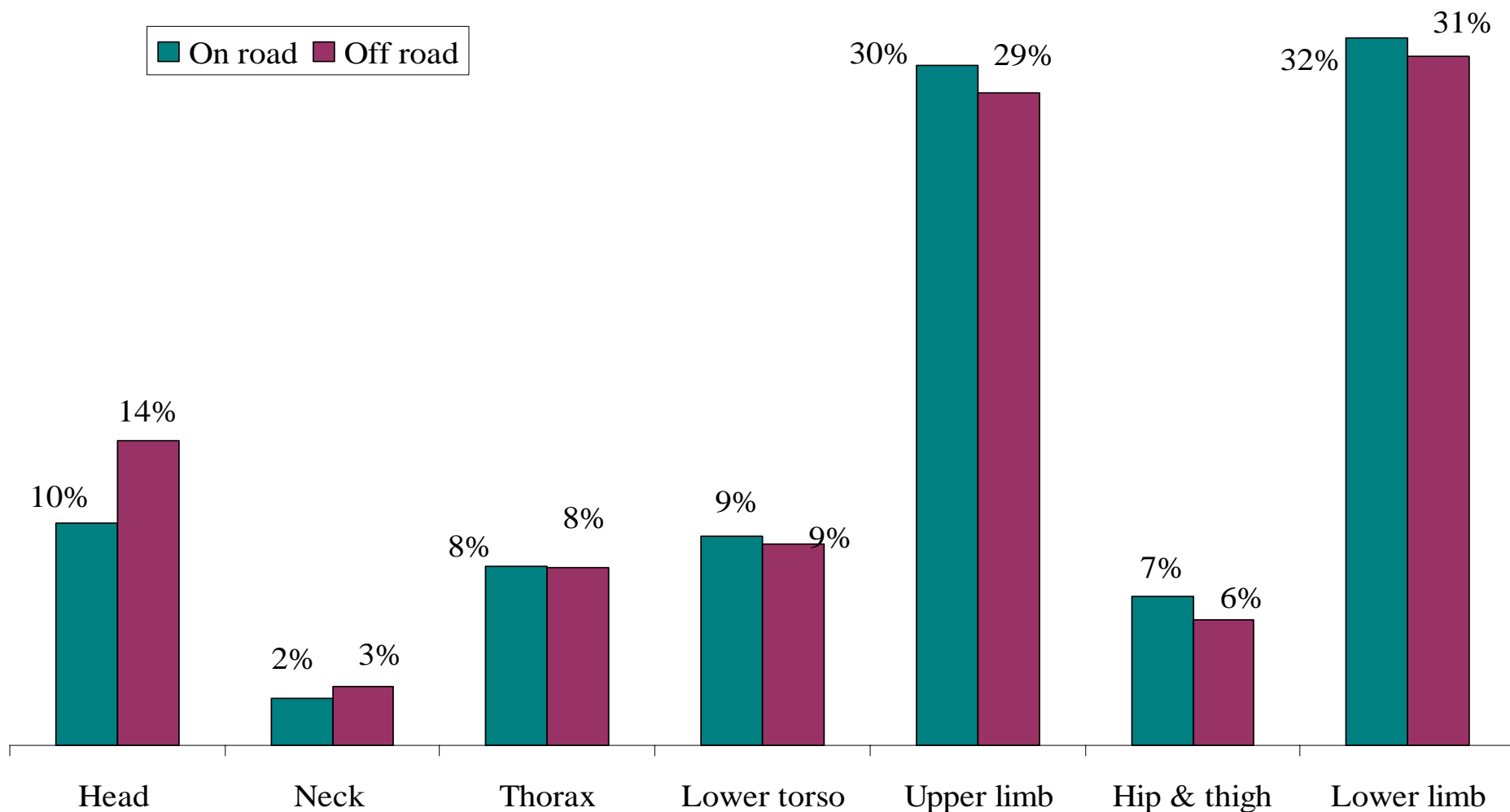
- ◆ Riders wearing protective clothing had fewer leg injuries.
- ◆ High boots reduce foot injuries
- ◆ Impact protectors reduce the severity of fractures

Motorcycling in Australia

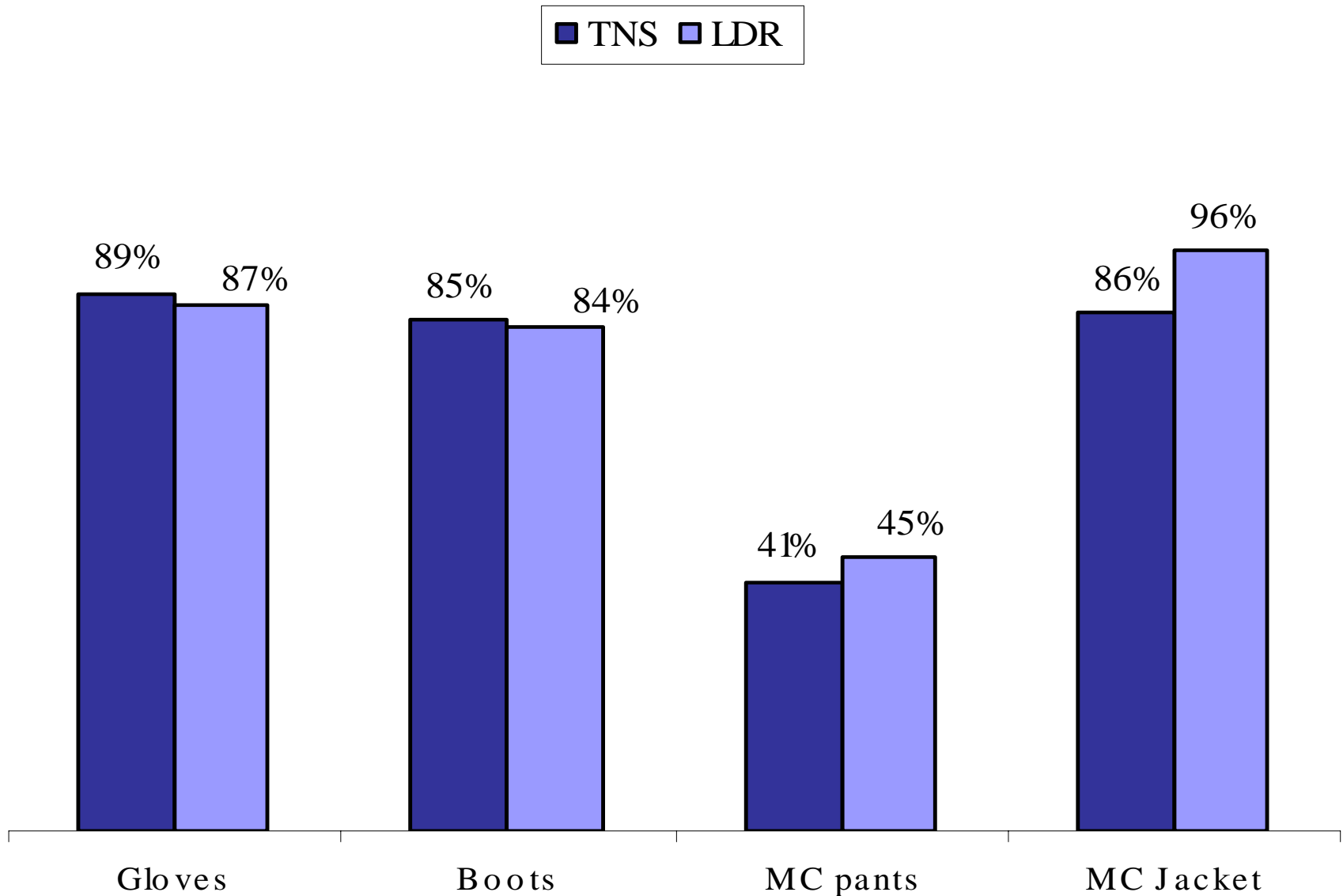
- ◆ 400,000 registered motorcycles
- ◆ 200 motorcycle fatalities (pa)
- ◆ 4,000 seriously injured in road crashes, and another
- ◆ 4,000 in off road crashes (pa)

Hospitalised motorcyclists' injuries

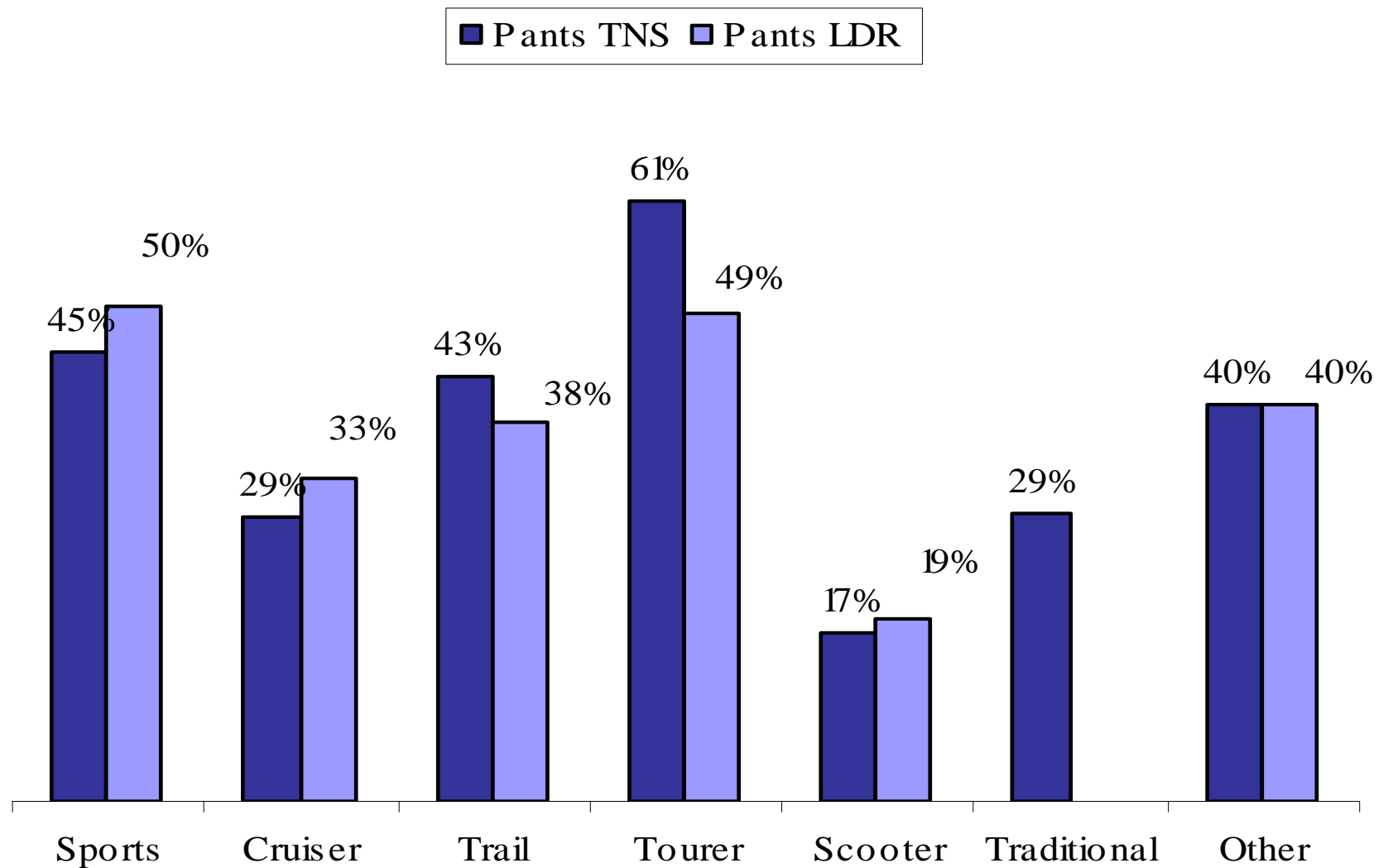
■ On road ■ Off road



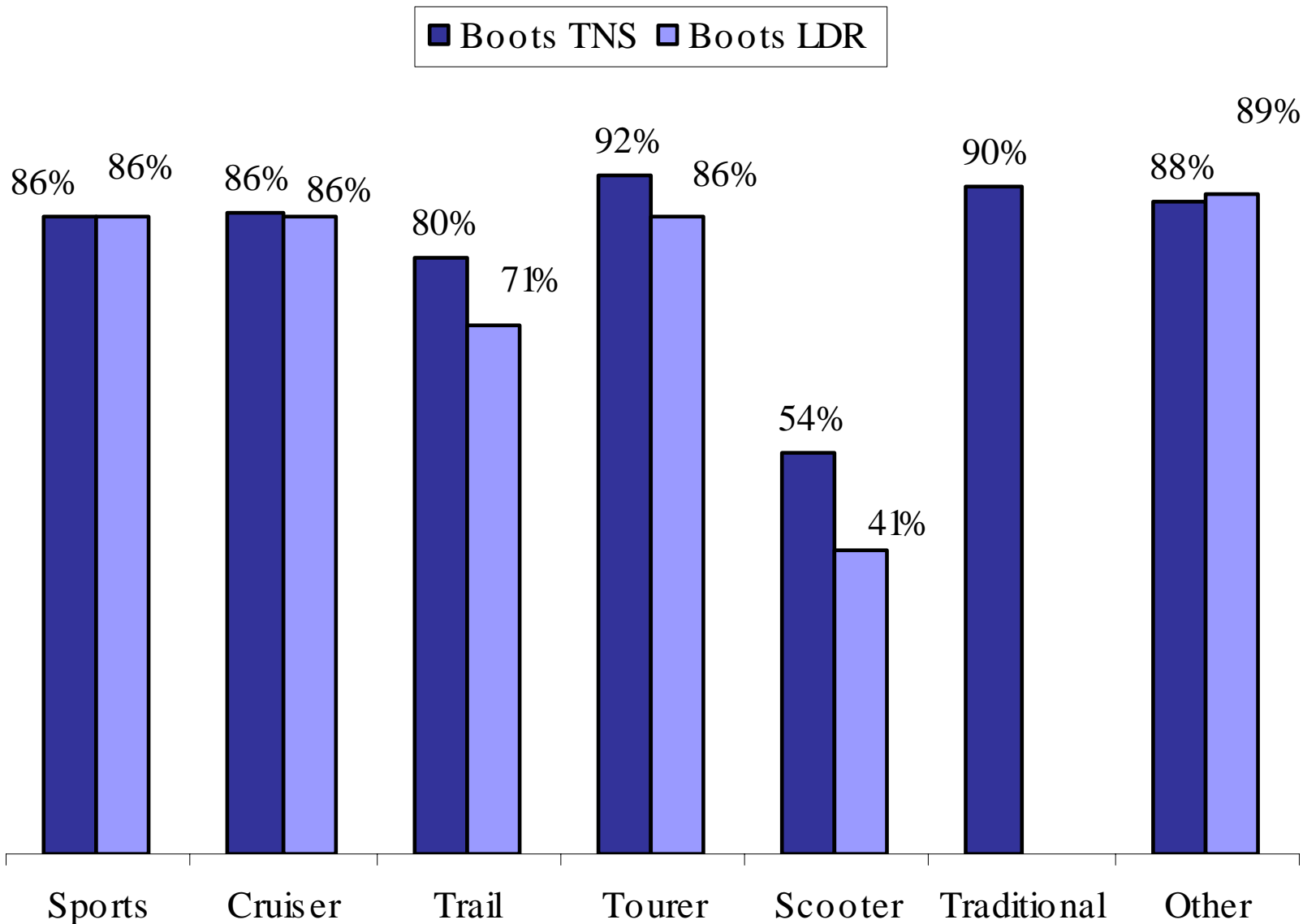
What do Australian riders wear?



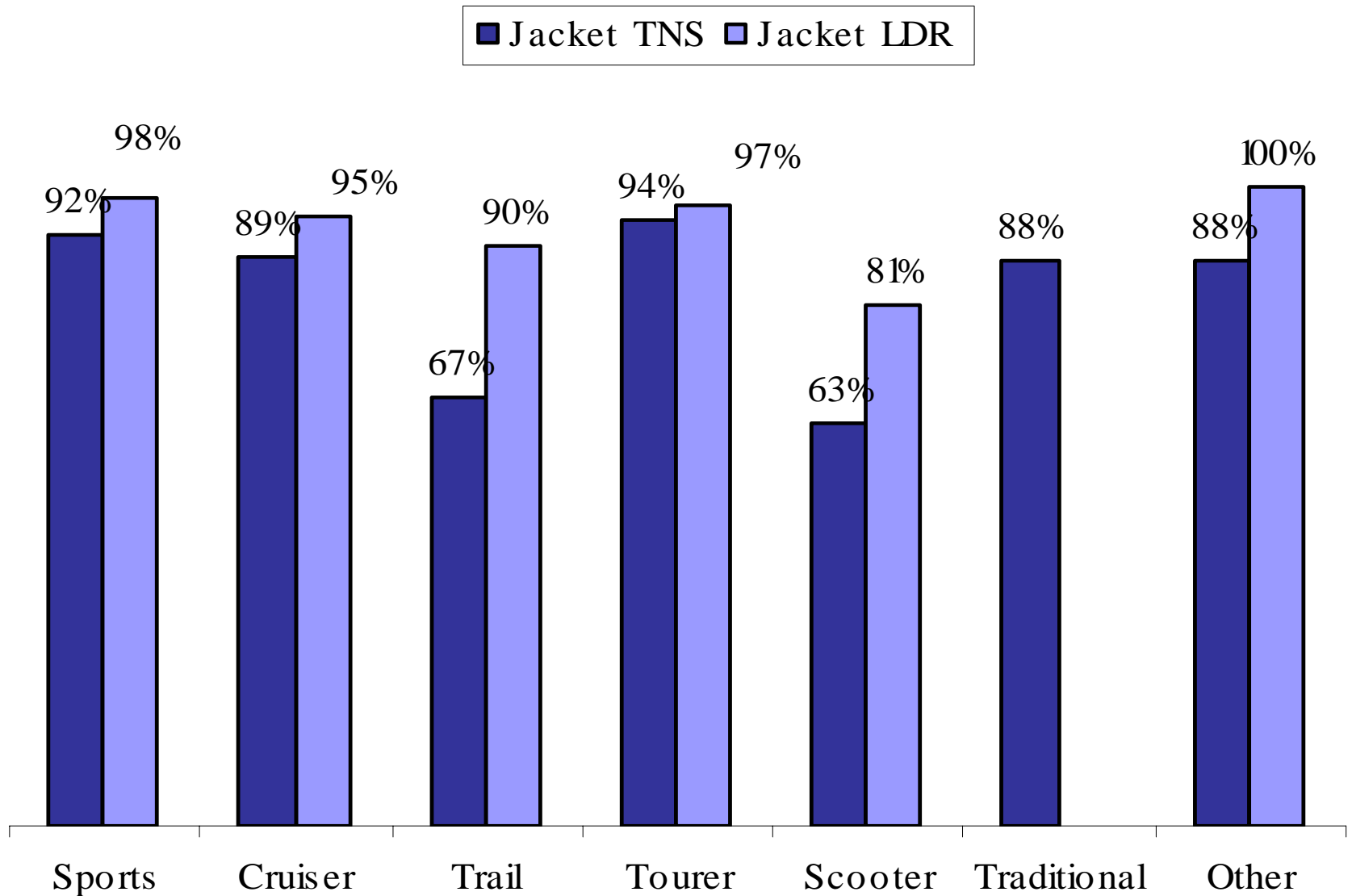
Who wears motorcycle pants?



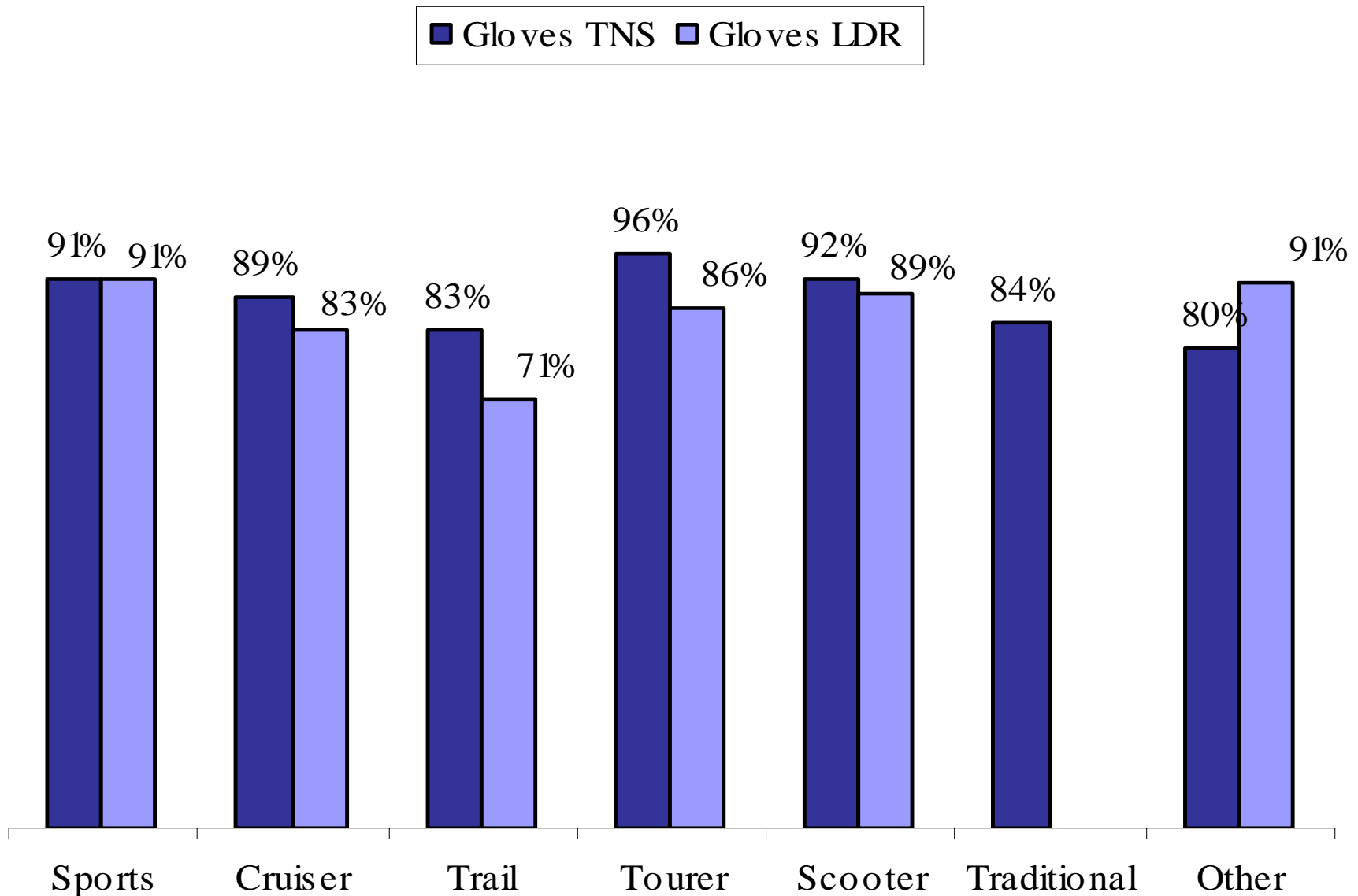
Who wears motorcycle boots?



Who wears motorcycle jackets?



Who wears motorcycle gloves?



How do you know the gear you buy, will work
and protect you in a crash?

You don't